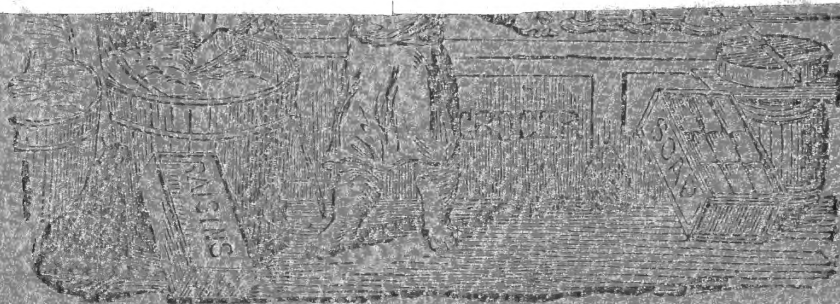


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NOTES ON BOMBYCID LARVAE.

BY HARRISON G. DYAR, NEW YORK, N. Y.



M

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H. G. DYAR

SANTA BARBARA, CAL.

Case 40 57 82 1.17 1.67 2.38 3.4 4.70

June 1.6 2.4 3.4

328 B

another hd 1.4 hd all black shiny, drog.
antennae has the 1st abd. segment at end
2 exs all yellow except a few black hairs on
3 and the dorsal tufts on 6-12, small
in size & the long tufts on 5 range laterad,
several segments, the tuft on 5 yellow
like the other hairs. white pencil normal
length with 5 dorsal tufts small (black
on 5 and 10 feet 1-12) 2, 3, 12 lateral 6 13
and all hairs from 3-6 on 6-10 white
tufts from 1-2 on 6-10 yellow. Pencil
normal white, apex from 1 on 5 shorter than
the others. Body black venter partly whitish
A normal no hair black 2-6, 10 feet 11, 12 &
13 on apr 3-8 on 2 113. Black tufts on 7, 8 & 9
yellow pencil from all ant on 3 about normal
length, black hair on 4 from 2-6, on 5 from
1-2 & 3-6. The 6-12 on 6-12 from 11
from 3-6 on 12 from 11 on 12 from 11 on 12

1891
325

Setoid. on maple yosemite. Inst Aug 17 1891
hd bilobed, green, mouth black, many hairs
W. 1 mm Body slender, folded in seg. in even
fat extended, the ant. pair of abd. ones
rudimentary. Hair from very minute
tubercles, rather long, stiff, blackish,
normal in arrangement. Body green
with a subdorsal band ^{from 2 to 13} white?
as it is a j.) Contorts violently when touched.
(no pupa in ground!)

Another all yellow (no black hair) except the
white pencils. Body black above, a little
whitish ventrally. abd. feet whitish.
The dorsal tufts are a little deeper yellow
than the lateral hairs. Sprinkles white
The hairs are pale subventrally. C shield
black & shining.

328 Imago, Feb 12 1892. Cal. m. 6957

Halisidota agassizii

Calc	.42	.56	.75	1.0	1.35	1.8	2.4	(3.2)	not 75
Found	—	—	—	—	1.4	1.8	2.4	3.2	

326

Aug 20, 1891

Thyateria? on dogwood (*Cornus mittallii*) in a house made of leaf folded (upper side in) and stitched together along the edge neatly.

~~ash~~ Stage 3 1.8 mm hd. rounded smooth, pale honey

yellow whitish on lower third, labrum & antennae white, jaws brownish with a brown spot at base

a distinct black patch covering ocelli; a few

pale hairs. Body slender, gradually tapering

back from the head, feet normal; piliferous

dots absent, the setae short and obscure

translucent whitish, with many very small

white dots, the dorsal vessel showing darker

On the anterior edge of 2 a large round s d

black spot and two smaller lateral ones

Feet all pale whitish. Length about 10 mm

Stage 2.4 hd as before, very pale buff (Pl 5 fig 13)

whitish on lower third, mouth parts colored as

before, jaws tipped with black; the patch over

the ocelli subtriangular. Body subopaque

white, covered with many little white flecks, the black spots on 2 as before. Trace of a white stig. line, but this may be due rather to the tracheae showing by transparency. ^{Releasing} Dorsal vessel plainly visible. Setae short, apparently normal in arrangement. Feet concolorous.

[Sh. hd 1.4 like 1.8 st but black patch on eyes smaller]

[Sh. hds from next Sept 25, 1.8, 2.4, 2.4]

[Hd from 'even' 3.2]

Stage 8 Head as before, w 3.2 mm. Body much the

same subopaque white with a dark greenish

tinge especially in the distinctly visible dorsal

vessel; thickly covered with white flecks

Spinach pale orange. No other marks, as the

black spots on 2 are now absent. A few setae

from head & s-v region of body (Desc. Sept 26)

On 12 got 2 coms from Jay Cook with bag with

once pupae in them. Corn of little bits of dried

leaves, not strong. (Put in ice house Nov. 14)

Pupa cylindrical, blunt on ant. end, eye cases

prominent; abd. small, tapering, cremaster

very large, flat and angularly rounded, ter-

minally in 4 or 5 large hooks. Ant. strong, under

lens seen to be wrinkled, very dark red-brown

anterior black on abd. with a rounded pale

spot over each eye) more reddish in thorax.

L. 15 W 5 - thorax thorax. Dark lively


327

Skiff on oak Yosemite Sept 1, 1891. Hd. belobd, subcordate, the apices of lobes angulated & slightly tubercululate, all granulated & minutely pilose, dark brown, irregularly shaded with pale brown, mouth & ocelli black; on each side above antennae a round pale yellowish spot, above which is a darker shade of the ground color. obscurely bisected by a faint, narrow yellowish oblique line that runs up from the spot; w 2.3 mm Body, no shield, thicker in middle, tapering, 2 rounded, small, entirely whitish green, legs & all with thick small yellowish dots & a faint yellowish sd line

Inst 4 Sept 4 Hd' subcordate, sides bulging, lobes rounded but venter deeply sunken, granulated & strongly smoky slate color, tinged with coppery with 3 rounded orange patches on each side before ocelli, 2 above them & a little back

328 2 on alder 1 normal but black encrusted on 7 dorsal line the tuft so only 2 are seen in the yellow. Hd 3.4 2 normal Hd 2.4 Four more on willow but had all hair on 2 & 13 & 5 on 12 yellow beard hairs 4 dorsal tufts added to 2 joints each the first hair on 6 and nearly all on 10 very yellow, another into, but the 1 normal. Another of it 13 below vertex of lobe. The edge of [ash hd 2.25] the upper two are somewhat blended into the ground color; ocelli & jaws black, labrum pale green, w 3.5? mm Body as before, pale green, covered with ^{small} yellowish granulation and an obscure but sharp edged pale yellow ^{sd} line from 3 - ^{before 13 joint} ~~anal plate~~, the body & feet are concolorous there is no anal pl. nor a shield but the back part of head just where it joins 2 is shiny black like a ring around body. A faint blackish d line representing dorsal vessel.

(cut off while I was gone to Lyell)

328  from 257 In hairy hair black from all parts of 2-6 & 10-13 while 257 has black only from joints 5 and 11 (want 6) [2] dorsal tufts variable, sometimes obsolete [3] rather more white (lots of intergrades) pencil hair, but character variable yellow on all yellow black tufts 5-12 largest on 5 & 12 also later black tufts on 4, a few black hair on 3 & 4 especially dorsally on 7. On 3 dorsally a few short ^{orange} hair. ^{no other black on 12}

Several in willow at Santa Barbara Oct 31, 1891 Lobs 328
 some body centrally nearly all pale yellow, outer all
 black. Should call central hair yellow. white pencils
 in some decidedly yellow. This feet in one between
 joints ① and ② first, almost in line with ①, elongate ③
 lateral ④ very small sty foot ⑤ ⑥ large s-v. ⑦ small
 on vent of upodal segs. 328 3 had small & black
 on line with legs some that hair ⑦ each set s-v. s-v. line, hairs of
 ⑦ dots on water. Golden hedge, greenish
 rounded. smooth base of labium
 Sept. 8, 1891 S. B. very shiny, antennae & a line

[illegible]

the body of the setae very short
but slightly thickened and bent at tip
H. G. D AR
large round clear liquid drops.

Nov 4/28 Head 1.5 round, leaf green, mouth parts
 yellow, many short hair arising from black conical
 granulation. Body leaf green with a pale str.
 line and thickly covered with conical black
 granulations, some of which are larger than
 others and surrounded by pale scale bear short
 pale setae. Under the wings. these granulation
 arise from swollen green bases and the setae
 each terminate in a spherical clear drop.

Head Body, lds 2.4 round, leaf green, slightly curved
with ~~many~~ conical granulations bearing minute
setae, concolorous with head but a few of the
larger ones are blue-black. Hd. small in com-
parison with body. Body cylindrical, 5 mm thick
dark leaf green with a distinct rather broad
yellow sty. line, strongly shaded with orange
from 2-13 a bordering anal plate. The body

is ann. ^{S S S} 3 per. seg. ^{D V AR} each annulet
centering ^{S S S} 3 per. seg. ^{C L F} dorsal blue-black gran-
ulation, surrounded by bluish green as the base
Only a few of these occur below stig. line and
then in the middle of the joint. The gran. are
each
topped by a short blackish seta. Feet & ventrals
pale green - nearly smooth. The body is very mi-
nutely punctured between the granulations.

Paper by cremaster & long loop. Thorax bent up
 at $\angle 45^\circ$ with abd, rounded, a slight depression
 posterior to it, a long pointed process on the
 head like a horn, ^{the horn has nothing in it but juice} almost continuous with side of
 body. Wing cases enormously developed, projecting
 more than the thickness of body, evenly rounded
 along ventral line, flattened laterally
 & tapering ^{ventrally} to an edge. Abd cylindrical, tapering.
 Cremaster flattened a little excavated below.
 dense pinkish micaceous #18 w/ pea green #9.
 Color clean honey yellow translucent without
 a greenish dorsal & lateral line bordered with
 marks except a narrow yellow & orange lateral
 line. ^{yellowish} the ventral line & veins of wing cases narrow
 line along the abd. edged above with greenish
 blue. L 25. W through wing cases from dots $\sqrt{10}$
 thickness of abd. just to cases 4. width of
 I mass Nov 5. C. entire.

Calc. .32 .49 .74 1.13 1.72 2.6 rat. 66

Found - - .7 1.1 - 2.6 (Oct 14)

Rhamnus
Willow *Salix*
also *Eucalyptus* 330 color shining pale
↑ nearly green (one kind of larva?)

On Castor bean S.B. Oct 19, 1891 Geometrid Egg. Elliptical

flattened above below, slightly hollowed above,
smooth, shiny, covered with little grain like dust

laid in cluster of about 40 or less on under side of leaf
G x .6 mm Under micro. still smooth almost perfectly very

slightly irregular, creased.

Covered entirely of silk, white, resembling spider web

open on leaves having together parts of 2 or 3 leaves

or two leaves, nearly opaque.

Pupa Cylindrical, rounded ant, abd segs

tapering post. Smooth, obsolete wrinkled; on the

head just back of eye a small warty prominence

Cremaster flattened, tapering, granular its base

well fastened in silk of cocoon. Color uniform

milky white except the antennae case, which

are bright brown strongly contrasting with rest

of pupa, the color joining on vertex of head. L 20 W 6

Larva. Hd rounded, reddish white, horn on the

mouth parts, ocelli black, width 2.6 mm Body

cylindrical, plump, abd feet on 10 and 13, the

Sabulodes dosithreata Guen
and Hulst

few segments between small, Small pale setae
from surface of body. Color milky white,

in geminate dorsal, broad single sd and

straggly stig. (prob. tracheae) opaque white lines

Spinach pale ochre, faintly bordered brownish

Another (less adv.?) had a pale green tinge, dark

dorsally, geminate d, single sd, lateral stig.

pale yellow lines, all rather broad with irregular

edges. Anal plate white & white line on anal feet

W. pale honey yellow mouth brown ocelli black.

Oct. the 2d line, d & sd, sd & lat, & lat &

stig are faintly lined opaque white line

The feet white with black tips.

Stage had 7 mm Hd round pale with a brownish tinge

especially around mouth & sides. ocelli black; a few

setae. Body green tinged with white, pale ventrally

A broad sd blackish shade band which

as well as the ground color contains several in-

distinct longitudinal whitish lines. A row of

medio-ventral dark brown spots. Hd 1.1

Immature Oct. 22, 1891 Cat. no. 6852

like penon stage but the longitudinal white line are more distinct, consisting of a germinal, broader single s-d and 3 lateral narrow and somewhat irregular ones. At st. adv. 8-11 become swollen & nearly white looking like maggot (fly in it)

	1.56	1.94	2.4	ratio 81240...
Cale	.45	.69	1.05	1.58
				2.4
Found	.45	.7	1.1	1.6
				2.4

ratio .66
died (89)
see



331 { 4 dead imago from a found }
pupa = Cal. no. 8842

On the salty grass right on the beach, Santa Barbara Cal
Cit. 29, 89/ Skipper? Egg. Elliptic oval, (Pl. 111 fig 10) flattened at base, a round slightly depressed spot on vertex. Smooth, slightly shiny, solid white, more distinctly white on top and in several indistinct vertical streaks on the sides. Under microscope covered with little regular raised reticulation becoming less distinct at micropyle. Hatched Nov 3 As before, but small. Diam. .8 mm Larva stage Hd. .45 Site on upper side of leaf near base in the fold - rounded Δ nearly pointed at vertex, lobes not separate, smooth dark brown, blackish on front, a small indistinct whitish line above mouth - some minute pits. Vertex head arising above back Body long, cylindrical, of uniform size, feet normal but short, seg. incisures shallow. Color uniform pale yellowish green, with a double d. single s-d, narrow, even yellowish lines. Anal plate large, circular, projecting & bearing a few pale hairs. Hd. .7 Is rounded Δ, very slightly notched on vertex, somewhat shiny, minutely punctured and

white and yellow

with scattered pile. Pale whitish, with a yellow
tinge, a broad brown band from below base of
antennae to vertex joining the one from the other side
below vertex of head & another similar fainter band
behind & 11 to this passing behind vertex. mouth
horn. Body light green, not shiny, transversely
annulated, the ten dorsal & 2d line distinct

narrow, pale yellow with even edge. They run the
whole length of body, the 5d. slightly wider than the d.

Anal plate rounded, projecting with some pale hairs
[Sh lid 1.1]

3rd Hd rounded, bulging in front & ad ends,
clypeus not depressed, pale green with many minute

blackish dots, the brown bands as before but much
less distinct; labrum whitish, very minute pits over
the surface - not smooth but appears minutely granulate

Body much as before, more grass green covered with
very minute dark green dots. The pale yellow

lines are as before, rather more distinct with their
edges defined by a darker green line than the

general color. They begin on the anterior edge of

the dorsal one terminate at the beginning of anal
plate which is large, concolorous with body & bears
several distinct brownish hairs. Length 7.5 mm. ⁻¹⁰

A sub-sty. ridge above which is a band slightly
darker green than ground color & below it a broad
distinct greenish yellow band which become more
distinct as the stage advances.

[Pup. skins on stems & blades of grass by either 2 loop-cylindrical
somewhat flat ventrally, blackened at the ends,
slender & long abd tapering, a tapering

process like a horn projecting from head in
front; wing cases not projecting, the leg cases


extending a little further than the wing cases along
the abdomen. L19, W3.5 L9 horn 1.5 mm. [Cremaster through head
excavate below
ridged subapically, representing anal plate of larva]

Nov 8 Hd as before but the brown bands
entirely absent, grass green, minutely wrinkled

& covered with very small brown dots; jaw & ocelli
black, labrum white; w. 1.6 mm Body grass
green, with 4 narrow yellow lines (2d, 1st) thin.

Head obscuring with dark green, the space between
them and down the side as far as the lateral

region thickly dotted with dark brown. May
2-V ridge a broad greenish yellow band, shading
off above into the ground color. ✓

Molt Dec 5. Hd rounded Δ, bulging, clypeus small,
opac green minutely dotted with black; labrum
whitish, jaws black, ocelli black mixed with
white. w 1.9 mm Body as before, anal plate
very large projecting, edged by the s-d line but
concolorous with body. Sides green, tinged with
yellow, line as before darker d, sides s-d narrow
dark olivaceous yellowish edged with green. The
body is densely dotted with green, darker than
the ground color (lacking yellow) & there is a
darker super sty shade. Sub sty. band along
the ridge pale yellow, broad, distinct. Feet about
spinules small, straw yellow + feet green
but these green dots in it like those on rest of body
anal plate 1.5 mm. long  projects to its length
beyond the last pair of abd. feet. Spinules on 2
large, on 5-11 small on upper side of sty. ridge.
the one on 12 larger and situated above sty. ridge.
another moult Dec 6 head 2.4 mm
Dec 10 died nearly ready to moult. Hd 1.9, new head?
(a hd. shed from found pupa hatched 2.1, perhaps at moult?)

Pamphila panopinioides Ik?

Size	.17	.24	.34	.5	.7	1.0	ratio .70
Found	—	.25	.3	.5	.7	1.0	Egg. from abcd. ♀

332 apparently covered with large
contiguous depression. D-33
color uniform pale green
flattened at base
spherical much

Little Nola on willow Santa Barbara Nov 2, 1891
[Sh hd. 7]

Hd. small round, pale brown; w .5 mm. Body thick
somewhat flattened, tapering a little each way from
middle with 3 rows of large smooth shiny dark
brown warts, that bear spreading long thin white &
blackish hair. row ① s-d, 2 pc seg on 2-4, ②
lateral ② s-v with some very minute warts below
it. Cph. large, deep brown with a whitish dorsal
line bisecting it. Color of body solid white, a broad
deep brown s-d band, somewhat irregular, narrower
on 3 & 4 and connected by a transverse bar over the
2 in another blacker one also on 5
dorsum on 7. Length of larva 5 mm. ✓

[Hd. 7 dark brown, shiny, blackish on vertex, whitish on
lower part of clypeus, ocelli black, mouth dark brown,
another hd (mm same) Eat (punk) on back side of
leaf and hide by day in old dead curled leaves
or stick them heads in folded leaves etc

eggs Hd same w 1 mm. Body wider than high,
rounded hardly tapering at all; warts ① very

Calc. 1.64, [1.83] 2.05. ratio. 89

Found 1.65, 1.8, 2.2, 2.5 3+

The feet large black except at base below.
A few small hairs on back. Feet normal.

Head with small brown spots on vertex & ①

Molt 2nd - Hd. subulate, black, shiny, white

shiny, subulate, black, shiny, white

Head to dorsal, a pale d. line. Hair long stiff

black under thoracic cage pointed at the end &

yellow but with some black the whole length

black black, with black, almost blackish.

Molt 3rd - Hd. subulate, shiny black, white

[Hd. 3rd] Hd. subulate, shiny black, white

to 7 mm. to 10 mm. body dark greyish black

on 7 mm. to 10 mm. body dark greyish black

on 7 mm. to 10 mm. body dark greyish black

on 7 mm. to 10 mm. body dark greyish black

on 7 mm. to 10 mm. body dark greyish black

on 7 mm. to 10 mm. body dark greyish black

on 7 mm. to 10 mm. body dark greyish black

on 7 mm. to 10 mm. body dark greyish black

on 7 mm. to 10 mm. body dark greyish black

on 7 mm. to 10 mm. body dark greyish black

on 7 mm. to 10 mm. body dark greyish black

Calc. 43, 54, 67, 84 1.05 1.31 1.64 2.05 2.56 3.2 4.0

Found 45, 55, 70, 1.1, 1.65, 2.0, 2.6, 3.2 4.0

2. time 1.1, 1.65, 2.0, 2.6, 3.2 4.0

ad. d. line slightly reddish, vent. d. line

ad. d. line slightly reddish, vent. d. line

ad. d. line slightly reddish, vent. d. line

ad. d. line slightly reddish, vent. d. line

ad. d. line slightly reddish, vent. d. line

ad. d. line slightly reddish, vent. d. line

ad. d. line slightly reddish, vent. d. line

ad. d. line slightly reddish, vent. d. line

ad. d. line slightly reddish, vent. d. line

ad. d. line slightly reddish, vent. d. line

ad. d. line slightly reddish, vent. d. line

ad. d. line slightly reddish, vent. d. line

ad. d. line slightly reddish, vent. d. line

ad. d. line slightly reddish, vent. d. line

ad. d. line slightly reddish, vent. d. line

ad. d. line slightly reddish, vent. d. line

ad. d. line slightly reddish, vent. d. line

ad. d. line slightly reddish, vent. d. line

ad. d. line slightly reddish, vent. d. line

ad. d. line slightly reddish, vent. d. line

ad. d. line slightly reddish, vent. d. line

335

15
1513

Egg from abdomen of cat no. 6861, Ladrones, P.M.
 Elliptical, flattened on two opposite sides and
 truncate on one end, the truncated end depressed
 and suff. of ridge around the depression,
 dors. covered with hexagonal depression, the
 reticulation at the base of ^{hex} which whiter than
 the rest of the egg. Color ^{very pale green} nearly uniform ~~white~~.
 accompanied by a transparent yellow gum
 in abd. of ♀ length 8. diameter .5 mm.

Under the microscope the hexagonal areas
are seen to be formed by broad elevated
reticulated lines more or less granular and
often broken. These elevations are nearly white.
The truncate end (top) of the egg is peculiarly long
an outer elevated ridge & an inner one between
which is a ring like depression. The central
elevation is hollowed. At base the micropyle and
the reticulation radiate around from the micropyle
which is itself finely reticulated ring ^{micropyle}.

Looking down from the OH Zylon Townsend / open among
the narrow leaves (5-6 pairs) "attached to top
glands" composed entirely of the in a dense
netting, the strands thick (not single threads) and
looking as if made of round holes, but open
enough to observe the pupa: oblong rounded, colored
white but irregularly yellowish stained. 23-24 mm

[illegible]

developed with large hordes. The body may have been white with black punctures; spiracles black. Eggs of *Tachina* on it - (2 eggs on body of larva). Elliptic ovate (P/M 4), flat below, rounded above, smooth, shiny white. Under the micr. very faintly divided into minute hexagonal areas, appearing nearly circular. L. 6, W 3 mm. Hatched by body of a small piece from the pointed end.

Eucateria variegata Lat.

336 Pupa

Thorax narrow, abd. enlarged, rounded, a slight depression behind thorax, hd. prominent, slightly flattened. Color ^{pale} yellowish with a purple tinge over the dorsum of abd. and a purple brown dorsal line; a 2nd row of purple brown spots running the whole length beside numerous dots of the same color over the whole surface, more sparsely dist. later.

Calc.	.25	.41	.59	.84	1.2	ratio	copied by
	1.76	.30	.53	1.0	rat. 53	Jan 3	1899
Head	.15	.3	.6	1.0			

Lycanotactica

336
= 698? *Lycanotactica* *longirostrata*

found under H.D. Jan 30 1891. Under the flower. Slightly flattened, wider than high, rounded at the ends, a sub-sty. ridge. Hd. black. 2.5 mm.

The feet black, abd. narrow, short, covered with long, body rather densely covered with short, stiff black setae above, wanting below, seen dist. only, with a lens. Color white with a radial yellowish line & a narrow pale brown d. line. 1st in middle of 2, remote from head, depressed, black. D. 2.4 mm. Egg deposited on the outside of the calyx of a flower. Much flattened, circular in outline from above, ^{very white} pale green, smooth; diam. .45 mm.

Under the microscope (see obj) it is seen to be green covered with raised white reticulation which surround a central green ommatophore, and become larger as they become more remote from the vertex, on the sides, ^{very} much enlarged.

at the instigation appearing as if light
 under head horn, below a mass of antennae
 white, w. 8 mm. Csh concolorous with body,
 depressed, verruculose. Body flattened below
 feet short, wider than high, rounded at the
 ends. Uniform whitish green, covered with
 minute blackish pits and pale setae 3-4.
 A distinct white line along s. st. ridge
 An obscure blackish d. line. On R there is
 to be a dorsal pale space which may be
 an opening and a small space just
 behind the spiracle. Spiracles pale ochraceous
 seeds in the thorax and seed pods.
 H. 13.65. 1st black shiny, clypeus large &
 ocelli 4 a narrow white line with dentate part to the other
 3rd uniform whitish green with minute black dots and
 4th a similar band and short black setae
 with pale setae 3rd. Spiracles black.
 H. 53. 1st black shiny, below white. Body as
 above. Csh large depressed, minute pale black
 Rod whitish, band of green, with a thin plate
 of thin & smaller colored glass, and the apical
 Hat 766. H. rounded, brown, near black, sutures
 green. W. 14 mm. Body whitish with sparsely
 distributed black setae, sides from a blackish
 much as in H. 53. Csh very large. Horn round
 not depressed, near covering. Anal plate round
 black, rather remote from anal end.

Macoleia Macleburni Butl
 det by. Hampden. Mar 27 1899
 Jan 3 1900
 Cat. no. 6907. Very injurious Cocos nucifera L.
 (Pots!) on coconut palm, Honolulu H. I.
 Jan 31, 1892. Sews together the leaf back to back
 behind the folded part with band of several
 threads at intervals. Several together, eat at
 top and finally cover at the base of the larva
 the leaf in a shaggy webby cocoon.
 Larva (mat.) 1st rounded, median suture not
 deep, clypeus & mouth parts small; several
 rather long hairs; minutely shagreened but
 not conspicuous. Hull sordid white,
 almost testaceous with ⁶ moderate large
 black spots, as follows: over ocelli, one above
 this in line with another near top of clypeus;
 above this latter another very near the median
 suture; two more below the vertex, elongate
 and almost contiguous, directed towards the
 side of head; four pale brown, black at
 base & tip; W. 3 mm. Body elongate, slender
 transparent and nearly colorless, the

green food showing through, 13 divided
 by a moderately distinct suture and trace of
 another on 12. On the central segment 3 large
 but almost perfectly flat, transparent oval
 above spiracle, with smaller indistinct ones
 below, the two upper is line and each
 bearing a hair. A pale yellow double
 dorsal line, each side a dorsal vessel,
 the white tracheae showing by transparency
 at the spiracles. Spiracles small, faint
 yellowish. Feet all pale. Length 32 mm.
 Tube cylindrical, slender, slightly tapering
 post., the antennae & leg cases project
 beyond wing bases; venation conical, not
 much flattened, terminating in several
 recurved spines. Color pale brown, darker in
 the abdominal sutures. L. 17 W 4 mm
Damago Feb 4 1892, cat. no. 6927 = 6927

Calc. .36 .55 .83 1.2 (1.8) (2.75) ratios .66
 Found .3 .55 .8 1.2 1.8 2.7 (1.8) (2.75)

338

Egg in evidence of cupule, hemispherical flat at base, thin shelled, covered
 with minute reticulations seen with 10x obj.
 diam .6 mm. Laid with slight grey down
 slight blackish
 Hatched Feb 3 Hd rounded, black, shiny, labrum
 white h. W 3 mm. Body small, feet perfect
 normal, the black, the other whitish black
 Body, most apparently as if white, conical
 with legs, inconspicuous, each with a single
 stiff black hair. Walks rapidly, slightly jerky.
 (Gave them food plants - grass, etc. grass, Feb 4)
 Hatched Feb 3 Hd slightly lobed, shiny black, labrum
 much paler is from over 8 & mouth W 5 mm
 Body enlarged at 12, bluish green, the dorsal
 distinct black, each with a black seta, a d
 sd & lat, whitish line, distinct over 5 &
 also whitish but with no distinct line
 Feet normal, all pale, the slight, distinct
 & largely shaded with black. L. 10 mm. W 3.5 mm.

No. 3. Sept 8 - 1st inst. Dark brown, nearly black, shiny,
a paler stripe over the vcelli. A few hairs.
Body blackish green, a distinct d. s. & c. Cal-
gial green line, the lateral narrower than
the others, s. s. l. & center pale, defined up-
wardly by a pale green s. r. band, which con-
trasts with the dark color of the dorsum.
But is only a shade lighter than ventral.
Scleriferous dots black, distinct, each with
a minute black seta. 12 enlarged feet visible.

566412

24/10/1971

the other. [36, vol 1.8]

1544

904 45-10000-100000

tinged with red

of living in white

at dull corners

by plane

2-V cl

Washed

the rest and tinged with yellow. The subventral space is only blackish, but densely mottled with pale round spots.

Entered ground Feb 18. Peris of usual shape. crevaster of 2 separate, rather distinct slender joints, directed backward. Color light brown, uniform L 13 W 4 mm.

Imago March 1, 1892. Cal. m. 6985-90

Egg at Kaawaloa, Kona, Hawaii, (on pine grass) nearly spherical, flattened at base, densely reticulated, of a flesh colored tint, covered with dense gray down. In large mass on stem of grass.

Laphygma flavimaculata Harvey
and, J. B. Smith

Calc.	.34	.99	1.8	3.3	6.0	rat. 53-
Found	.55	1.0	1.8	3.2	6.0	

Oct 24 1891

339 cultivated vine of *Ipomoea* sp. growing on *Ipomoea tuberculata* Roemer Sch. Honolulu Feb 6 1892

Higher than wide, rounded, flat in the front smooth. Shagreened; chylous large; leaf green. a broad black vertical band on each side covering the ocelli which it just encloses by its well defined and border; before it the ground color assumes a yellowish tint, and preceding the yellowish shade is a faint blackish clouded band. antennae yellowish, in continuation of the above mentioned shade. ^{yellowish} segments annulated, ^{black} in 6 mm. Body plump, robust, the head slightly retracted below 2, but body elsewhere of uniform size. Horn large, tapering, curved backward covered with short tubercles which bear very minute setae. Color ^{smooth} a little mottled with whitish, leaf green, except for the following ^{purplish} brown marks, mottled with black: a patch covering the thor. feet & their bases; an oblique s-v patch on 6, analogous to the mark covering the alid. feet. each of which extends

Little one had rounded, brown-lustrous pale greenish
 yellow, mounts a little darker ocelli brown. w. 5 mm.
 Body cylindrical, smooth shiny but distinct
 annulated uniform whitest. the fold
 showing as dark green; a faint narrow white
 sd line, ending at horn. Horn straight, thick,
 blunt at end. Black, minutely setose, 1.5 mm.
 Molt Feb 9 head 1 mm, rounded, pale green,
 with many setiferous white granulation.
 ocelli black. Body cylindrical, annulated &
 granular, the granulation, setiferous, white.
 color pale green; caudal horn black, spinous
 2.5 mm tapering. Spinous with blackish
 shades. Hatched Oct. 55. Entirely white, except black horn
 & I tuberculate behind. Much bowditch Feb 11.
 Elliptical, nearly spherical, not flattened: smooth
 shiny, nearly colorless & translucent, with a
 greenish tinge. Dimension 1.3 x 1.1 x 1.1 mm.
 Under 10x, smooth shiny, covered with
 circular shallow pits of varying size and
 irregularly distributed, a few intersecting.
 Molt Feb 11 head 1.8 rounded, green with conical
 white granulation, a faint yellowish line run-
 ning before the ocelli in the horn form followed
 by a black shade spot. Body cylindrical, annulated
 covered with white granulation, a very faint
 sd line and indication of the 7 oblique lateral
 lines, in the horn form preceded by black
 shades. Spinous surrounded by black and
 surrounding colored markings on all the feet.
 muscles ochreous (horn lost in the example)

white supra-stigmatal faint 54
 apodal (545)

Entered the earth and formed a cell.
 Large, robust, eyes and joints of legs
 (shoulders) prominent. Long, close to
 distant from the body, extending down to
 the middle of the body then recurved along
 the body to near its origin; rounded and a
 little enlarged at the end. Abd. tapering
 somewhat head, flat, narrowing laterally
 ending in a sharp spine. Abd. legs small
 moveable, inserted in the incisions of the
 slight undulating red, darker on the top
 side; circumferentially black. The mouth
 of the 15 mm long tongue case (recurved)
 about 4 mm. middle of the 2.5 mm. distance
 from origin of tongue case to point where it is
 recurved 21 mm; distance of tongue case from
 body (before recurved) 5.5 mm.

M. J. March 24, 1892; cat. no. 7019

Pteropore angulata?

H. C. Dyer
SANTA BARBARA, CAL.